

AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claims 1. – 18. (Canceled).

19. (Currently amended) A magnetron coating system, comprising:

a first coating source;

an auxiliary substrate arranged between the first coating source and an area into which a substrate to be coated is to be received;

a magnetron having a cathode composed of the auxiliary substrate; and

a device structured and arranged to determine an area density of the auxiliary substrate,

wherein:

the device determines the area density of the auxiliary substrate at a location behind a plasma area between the auxiliary substrate and the substrate to be coated with respect to a direction of rotation of the auxiliary substrate,

the location is before a plasma area between the first coating source and the auxiliary substrate with respect to the direction of rotation of the auxiliary substrate, and

the device comprises an x-ray source that irradiates the auxiliary substrate at the location and a photodetector that determines x-ray radiation reflected from the auxiliary substrate.

20. *(Previously presented)* The magnetron coating system according to claim 19, wherein the auxiliary substrate is formed as a cylinder, and the magnetron comprises a rod cathode magnetron.

21. *(Previously presented)* The magnetron coating system according to claim 19, wherein the first coating source comprises a planar magnetron.

22. *(Previously presented)* The magnetron coating system according to claim 19, wherein the first coating source comprises a shield.

23. *(Previously presented)* The magnetron coating system according to claim 19, wherein the device comprises a detection device structured and arranged to determine x-ray fluorescence.

24. *(Previously presented)* The magnetron coating system according to claim 19, further comprising additional auxiliary substrates, wherein the magnetron comprises additional cathodes composed of the additional auxiliary substrates.

25. *(Currently amended)* A method for depositing thin layers, comprising:
depositing a layer on an auxiliary substrate via a first coating source;
coating a substrate via a magnetron having a cathode composed of the auxiliary substrate;
and
determining an area density of the auxiliary substrate;

determining a deposition rate in a plasma area between the first coating source and the auxiliary substrate; and

after the determining the area density of the auxiliary substrate, determining an area density of the substrate from a mass balance of the auxiliary substrate.

26. *(Previously presented)* The method of claim 25, wherein a thickness of the layer deposited on the auxiliary substrate is less than 100 nm.

27. *(Previously presented)* The method of claim 26, wherein the thickness of the layer deposited on the auxiliary substrate is less than 10 nm.

28. *(Previously presented)* The method of claim 25, wherein the layer deposited on the auxiliary substrate comprises a metal layer.

29. *(Previously presented)* The method of claim 28, wherein the metal layer comprises an element having a higher mass number than an average mass number of a material of the auxiliary substrate.

30. *(Previously presented)* The method of claim 25, further comprising:
operating the first coating source as an other magnetron with inert gas; and
operating the magnetron with at least one of the inert gas and reactive gas.

31. *(Previously presented)* The method of claim 30, wherein at least one of the following:

the inert gas comprises argon, and

the reactive gas comprises at least one of nitrogen, oxygen, and methane.

32. *(Previously presented)* The method of claim 25, wherein the area density of the auxiliary substrate is determined after the coating of the substrate.

33. *(Previously presented)* The method of claim 25, wherein the determining of the area density of the auxiliary substrate comprises x-ray fluorescence.

34. *(Previously presented)* The method of claim 25, further comprising operating the magnetron with DC voltage or pulsed DC voltage.

35. *(Previously presented)* The method of claim 25, wherein the cathode comprises several cathodes and the method further comprises operating the magnetron with the several cathodes with a frequency of approximately 10 kHz to approximately 100 kHz.

36. *(Previously presented)* The method of claim 25, wherein the coating of the substrate comprises depositing an other layer on the substrate.

37. *(Previously presented)* The method of claim 36, wherein the other layer comprises titanium dioxide.

Claims 38. and 39. (*Canceled*).